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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,711	11/15/2001	Mareo Kimura	111111	7695

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EXAMINER

JOHNSON, CHRISTINA A

ART UNIT PAPER NUMBER

1725

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/987,711

**Applicant(s)**

KIMURA ET AL.

**Examiner**

Christina Ildebrando

**Art Unit**

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Se

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-25 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 17, 2004 has been entered.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5-13, 15-18, and 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Horiuchi et al.

Horiuchi et al. (US 5,610,117) discloses a catalyst composition useful in the purification of diesel engine exhaust gas. The catalyst composition comprising (A) a first

catalytic component comprising the two elements of iron and manganese and a refractory inorganic oxide and (B) a third catalytic component comprising at least one noble metal selected from the group consisting of palladium, platinum, and rhodium, and a refractory inorganic oxide deposited on a support (column 2, lines 60-65).

Suitable refractory inorganic oxides include titania and zirconia having BET surface areas in the range of from 1-200 m<sup>2</sup>/g (column 5, lines 55-60).

With regards to component (A), it is taught that the total amount of iron and manganese is in the range of from 0.5-60g, preferably 2-20g per liter of catalyst and that the ratio of Fe:Mn is in the range of from 10:1 to 1:10 (column 5, line 64 – column 6, line 5). With regards to component (B), it is taught that the amount of noble metal is in the range of from 0.001-6g per liter of catalyst (column 6, lines 40-50).

It is taught that the catalyst is prepared by separately preparing powders of (A) and (B) by immersing the refractory inorganic oxide into a salt solution of the metals, followed by drying and calcination at a temperature in the range of from 300-850 degrees C (column 7, lines 55-65). The powders are then mixed to form the final catalyst (column 8, lines 5-12). The use of zirconia in component (A) and titania in component (B) is exemplified (Example 1).

With regards to the language of the claims, it is the position of the examiner that, because the reference teaches immersion of the zirconia in the salt solution and given that the catalyst is prepared in the same or similar manner as disclosed herein, the catalyst of Horiuchi would inherently possess the lamellar transition metal layer claimed, including one in which at least part of a transition metal is solved into the zirconia

particles. With regards to the rate claimed, it is the position of the examiner that because the reference teaches the same components in the same amounts, the rate would inherently be the same. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

With respect to the limitation "wherein the zirconia particles and the transition metal layer have been calcined at 800 degrees C or more in an inert gas atmosphere or a nitrogen gas atmosphere" this limitation has been regarded as a process of making limitation which does not limit the product as claimed. When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. However, it is noted that the reference meets the calcination temperatures claimed.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Horiuchi et al.

3. Claims 1-3, 7-8, 11-13, 15, 19-20, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Montreuil et al.

Montreuil et al. (US 5,155,077) discloses a catalyst composition useful in the purification of exhaust gas. The catalyst composition comprises a transition metal

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containing zeolite phase and a transition metal containing oxide phase (column 1, lines 50-55). Preferably the oxide is zirconia (column 2, lines 45-55). Suitable transition metals include copper, cobalt, nickel, chromium, iron, manganese, silver, zinc, and calcium (column 2, lines 15-30). It is taught that copper is contained in the oxide in an amount between 0.1-20% by weight (column 3, lines 1-10). Suitable zeolites include ZSM-5 (Table 1). The two phase materials can be employed in a ratio between 10-90% and 90-10% by weight (column 2, lines 25-30).

With regards to the language of the claims, it is the position of the examiner that, because the reference teaches immersion of the zirconia in the salt solution and given that the catalyst is prepared in the same or similar manner as disclosed herein, the catalyst of Montreuil et al. would inherently possess the lamellar transition metal layer claimed, including one in which at least part of a transition metal is solved into the zirconia particles. With regards to the rate claimed, it is the position of the examiner that because the reference teaches the same components in the same amounts, the rate would inherently be the same. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

With respect to the limitation "wherein the zirconia particles and the transition metal layer have been calcined at 800 degrees C or more in an inert gas atmosphere or a nitrogen gas atmosphere" this limitation has been regarded as a process of making

limitation which does not limit the product as claimed. When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. However, it is noted that the reference meets the calcination temperatures claimed.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Montreuil et al.

4. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Seshan et al.

Seshan et al. (US 5,989,457) discloses a catalyst composition useful for the production of synthesis gas. The catalyst composition comprises a thermally stabilized zirconium oxide coated with 0.1-5% platinum and 0.5-5% nickel (column 3, lines 35-50). The thermally stabilized zirconium oxide may be combined with an additional metal such as cerium (column 3, lines 55-65).

With regards to the language of the claims, it is the position of the examiner that, because the reference teaches immersion of the zirconia in the salt solution and given that the catalyst is prepared in the same or similar manner as disclosed herein (see column 4, lines 15-30), the catalyst of Seshan would inherently possess the lamellar transition metal layer claimed, including one in which at least part of a transition metal is solved into the zirconia particles. With regards to the rate claimed, it is the position of the examiner that because the reference teaches the same components in the same

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amounts, the rate would inherently be the same. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

With respect to the limitation "wherein the zirconia particles and the transition metal layer have been calcined at 800 degrees C or more in an inert gas atmosphere or a nitrogen gas atmosphere" this limitation has been regarded as a process of making limitation which does not limit the product as claimed. When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. However, it is noted that the reference meets the calcination temperatures claimed.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Seshan et al.

5. Claims 1-5, 7-8, 11-15, 19, and 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshikawa.

Yoshikawa (US 2002/0016259) discloses a catalyst composition useful in exhaust gas purification. The catalyst composition comprises a complex oxide of zirconium and manganese and/or cobalt ( first component) with a zeolite (second



component) (0013). The first component may further contain cerium (0019 and 0042). Suitable zeolites include ZSM-5, faujasite, beta zeolite, and mordenite (0020). The amounts of materials taught by the reference meet the instantly claimed amounts(see 0016, 0019, 0025).

With regards to the language of the claims, it is the position of the examiner that, because the reference teaches immersion of the zirconia in the salt solution and given that the catalyst is prepared in the same or similar manner as disclosed herein (see 0017), the catalyst of Yoshikawa would inherently possess the lamellar transition metal layer claimed, including one in which at least part of a transition metal is solved into the zirconia particles. With regards to the rate claimed, it is the position of the examiner that because the reference teaches the same components in the same amounts, the rate would inherently be the same. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

With respect to the limitation "wherein the zirconia particles and the transition metal layer have been calcined at 800 degrees C or more in an inert gas atmosphere or a nitrogen gas atmosphere" this limitation has been regarded as a process of making limitation which does not limit the product as claimed. When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to

show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. However, it is noted that the reference meets the calcination temperatures claimed.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Yoshikawa.

### ***Response to Arguments***

6. Applicant's arguments filed June 17, 2004 have been fully considered but they are not persuasive.

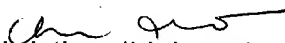
Applicant argues generally that, with respect to all of the references relied upon by the examiner, that the prior art references do not teach a catalyst in which the transition metal is solved into the zirconia particles. This argument has been considered but is not persuasive. As discussed above, the references disclose calcination temperatures which would result in the structure claimed. Therefore, the references disclose embodiments which would anticipate the instant claims.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (571) 272-1176. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Christina Ildebrando  
Patent Examiner  
Art Unit 1725  
9/1/04

CAI  
September 1, 2004